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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,785	09/06/2005	Ingo Buschke	BUSC3001/FJD	1834
23364	7590	10/17/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			HOFFBERG, ROBERT JOSEPH	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/522,785

Applicant(s)

BUSCHKE, INGO

Examiner

Robert J. Hoffberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Detailed Action***

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show #10 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a first wall and a heat spreader curved (claim 14); and the wave pattern (claim 15) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 12 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recites different values and ranges of not more than 1 mm, not more than 0.4 mm and between 0.05 mm and 0.2 mm. Examiner interprets as the thickness of the metal or ceramic sheet of not more than 1 mm for the claim examination. Claim 15 recites a wave pattern, especially a beam-shaped wave pattern. Examiner interprets as a wave pattern such as a sinusoidal wave pattern for the claim examination.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 9-10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by John et al. (US 3,522,486).

With respect to Claim 9, John et al. teach a device, comprising: an electronics housing (#41), which defines a first wall (#41 left) and an internal space (See Fig. 2A);

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at least one circuit board (#17), which is arranged in the internal space and which is populated at least on a first surface (see Fig. 1) with electronic components (#18), with said first surface facing said first wall and said internal space being filled with a potting compound (#31 and #43) at least between said first surface and said first wall, whereby heat given-off by said electronic components can be led-away to said first wall; an area head spreader (#44) embedded in the potting compound between said at least one circuit board and said first wall has a front face (#44 left) and a rear face (#44 right), which faces said first wall with its front face and said circuit board with its rear face, and which has a greater thermal conductivity than the potting compound (aluminum vs. polyurethane foam), whereby inhomogeneous temperature distributions over the surface of said first wall can be reduced (claim 9), said heat spreader comprises a metal (Col. 2, line 61, aluminum) foil (claim 10), said heat spreader is essentially planar (see Fig. 2) (claim 13) (examiner note: while Johns et al fails to disclose the side of the circuit board that has the electronic components mounted, if the components are mounted on the left side of #17 in #31' then the first wall is #41 left side; otherwise if the components are mounted on the right side of #17 in #31' then the first wall is #41 right side).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claim 11-12 and 14-16, as best understood by the examiner, are rejected under 35 U.S.C. 103(a) as being unpatentable over John et al. (US 3,522,486).

With respect to Claim 11, Johns et al. disclose the claimed invention except for heat spreader is copper or aluminum nitride. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the heat spreader from any material including copper or aluminum nitride that has good heat conductivity, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to Claim 12, Johns et al. disclose the claimed invention except for thickness of the heat spreader. It would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture to have the heat spreader of any thickness including not more than 1 mm that permits the heat to be dissipated, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to Claim 14 and 15, Johns et al. disclose the claimed invention except for the curved shape of the first wall and the curved shape or wave pattern of the heat spreader. It would have been an obvious matter of design choice to have the first wall of the housing and the heat spreader to be any shape including curved or wave pattern, since such a modification would have involved a mere change in the shape of a

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component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

With respect to Claim 16, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

### **Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nagasaka et al. (US 5,408,383) a housing with a circuit having components mounted on a side facing a first wall of the housing with a potting compound and a planar heat spreader between the circuit board and the first wall.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAEL DATSKOVSKIY  
PRIMARY EXAMINER

RJH

*RJA*

*Michael Datskovskiy*  
10/13/06